

RadioShack®

FEATURES

Your RadioShack PRO-92 500-Channel Portable Trunking Scanner is one of a new generation of scanners designed to track Motorola® Type I and Type II (such as Smartnet® and Privacy Plus®) and hybrid analog trunking systems, plus GE/Ericsson (EDACS®) and EF Johnson (LTR®) type systems, which are extensively used in many communication systems.

Trunking communications systems let a large group of 2-way radio users (or even different groups of 2-way radio users) efficiently use a set of frequencies. Instead of selecting a specific frequency for a transmission, the user simply selects a talk group. The trunking system automatically transmits the call on the first available frequency, and also sends a code that uniquely identifies that transmission.

Since the trunking system might send a call and its response on different frequencies, it is difficult to listen to trunked communications using a regular scanner. The PRO-92 monitors the data sent with a 2-way radio transmission, so you can hear the call and response for that user and more easily "follow" the conversation.

The scanner also lets you scan conventional transmissions, and is preprogrammed with service search banks for convenience. By pressing a single button, you can quickly search those frequencies most commonly used by public service and other agencies without tedious and complicated programming.

This scanner gives you direct access to over 33,000 frequencies including those used by police and fire departments, ambulance services, government agencies, air, and amateur radio services.

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LTR is a registered trademark of EF Johnson.

Motorola, Smartnet and Privacy Plus are registered trademarks of Motorola Inc.

EDACS is a registered trademark of GE/Ericsson Inc.

Your scanner includes these special features:

Simultaneous Trunking Operation — tracks three trunking systems, LTR, Motorola, and EDACS at the same time, as well as conventional systems.

Text Input — lets you input a text label for each channel, talk group ID, bank, or other memory so you can easily know about the transmission you are hearing.

Subaudible Tone Decode — decodes and displays the Continuous Tone Coded Squelch System (CTCSS) tone signal being transmitted.

Digital Subaudible Tone Decode — decodes and displays the Digital Coded Squelch (DCS) being received.

12-Character, 4-Line, Dot-Matrix Display — shows you detailed operating information and lets you easily program the scanner.

Data Cloning — lets you transfer the programmed data to another PRO-92 scanner. You can also upload or download the programmed data to or from a PC using an optional interface kit.

10 Channel-Storage Banks — let you store 50 channels in each bank to group channels so calls are easier to identify.

Triple Conversion Superheterodyne Receiver — virtually eliminates any interference from intermediate frequency (IF) images, so you hear only the frequency you select.

Hyperscan™ and Hypersearch™ — the scanner scans at up to 25 channels per second and searches at up to 50 steps per second, to help you quickly find interesting transmissions.

60 Preprogrammed Frequency Ranges — let you search for transmissions within preset frequency ranges or within ranges you set, to reduce search time and select interesting frequencies more quickly.

Scan Delay — delays scanning for about 2 seconds before moving to another channel in conventional mode, so you can hear more replies that are made on the same channel.

Priority Channel — you can set the scanner to check one channel every 2 seconds so you do not miss important calls.

Signal Attenuation (Attenuate) — lets you program each memory to reduce the scanner's sensitivity to strong local signals, to reduce interference or noise caused by these signals.

Weather Alert — automatically sounds the alarm tone to advise of hazardous weather conditions when it detects the alert signal on the local National Oceanic and Atmospheric Administration (NOAA) weather channel.

Weather SAME Decode — displays the weather event text so you can see the reason for the alert.

Lock out Function — lets you set your scanner to skip over specified channels or frequencies when scanning or searching, and skip over IDs when tracking trunked systems.

Key Lock — lets you lock the scanner's keys to help prevent accidentally changing the scanner's programming.

Flexible Antenna with BNC Connector — provides excellent reception and is designed to help prevent antenna breakage.

Memory Backup — keeps the frequencies stored in memory for an extended time even without a battery.

Three Power Options — let you power the scanner with internal batteries (non-rechargeable batteries or rechargeable batteries). You can also use an AC adapter (not supplied) or power the scanner in a vehicle using a DC adapter (not supplied).

Supplied Police Call Trunking Guide — provides a quick reference to public safety trunking radio systems in the United States.

Your PRO-92 scanner can receive these frequencies:

- 29–54 MHz
- 108–136.9875 MHz
- 137–174 MHz
- 380–512 MHz
- 806–823.9875 MHz
- 849–868.9875 MHz
- 894–960 MHz

This Owner's Manual also includes the section "A General Guide to Scanning" on Page 65 to help you target frequency ranges in your service area so you can search for a wide variety of transmissions.

FCC NOTICE

Your scanner might cause TV or radio interference even when it is operating properly. To determine whether your scanner is causing the interference, turn off your scanner. If the interference goes away, your scanner is causing the interference. Try the following methods to eliminate the interference.

- Move your scanner away from the TV or radio.
- Connect your scanner to an outlet that is on a different electrical circuit from the TV or radio.
- Contact your local RadioShack store for help.

If you cannot eliminate the interference, the FCC requires that you stop using your scanner.

This device complies with Part 15 of the *FCC Rules*. Operation is subject to the following conditions: (1) This device must not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: Mobile use of this scanner is unlawful or requires a permit in some areas. Check the laws in your area.

SCANNING LEGALLY

Scanning is a fun and interesting hobby. You can hear police and fire departments, ambulance services, government agencies, private companies, amateur radio services, aircraft, and military operations. It is legal to listen to almost every transmission your scanner can receive. However, there are some electronic and wire communications that are illegal to intentionally intercept. These include:

- telephone conversations (cellular, cordless, or other private means of telephone signal transmission)
- pager transmissions
- scrambled or encrypted transmissions

According to the *Federal Electronic Communications Privacy Act* (ECPA), as amended, you could be fined and possibly imprisoned for intentionally listening to, using, or disclosing the contents of such a transmission unless you have the consent of a party to the communication (unless such activity is otherwise illegal). These laws change from time to time and there might be state or local laws that also affect legal scanner usage.

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PREPARATION

POWER SOURCES

You can power your scanner from any of three sources:

- internal non-rechargeable batteries or rechargeable batteries (not supplied — see “Using Batteries”)
- standard AC power (with an optional AC adapter — see “Using AC Power” on Page 14)
- vehicle power (with an optional DC adapter — see “Using Vehicle Power” on Page 15)

Notes:

- Connecting an AC or DC adapter to the scanner disconnects internal batteries when you use the supplied non-rechargeable battery holder, but it does not disconnect internal batteries when you use the supplied rechargeable battery holder.
- If you install the rechargeable battery holder, you can operate the scanner and recharge the rechargeable batteries at the same time. See “Using Batteries” below and “Charging Rechargeable Batteries” on Page 13.
- If the scanner stops working properly after connecting it to power, try resetting it. See “Resetting/Initializing the Scanner” on Page 75.

Using Batteries

You can power the PRO-92 with six AA batteries. For the longest operation and best performance, we recommend alkaline batteries, available at your local RadioShack store.

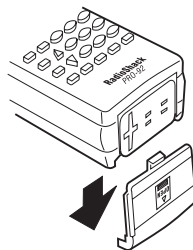
You can use either the supplied non-rechargeable black battery holder, or the supplied rechargeable yellow battery holder. If you use the rechargeable battery holder, we recommend RadioShack nickel-cadmium or nickel-metal hydride batteries.

Warning: Never install non-rechargeable batteries in the rechargeable yellow battery holder. Non-rechargeable batteries can get hot or explode if you try to recharge them.

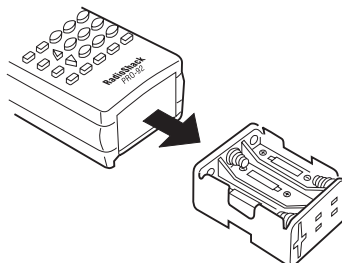
Note: You must charge rechargeable batteries before you use them the first time. See "Charging Rechargeable Batteries" on Page 13.

Follow these steps to install the batteries.

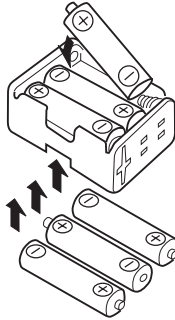
1. Press down on the battery compartment cover on the bottom of the scanner and slide the cover in the direction of the arrow to remove it.



2. Pull out and slide the battery holder out of the battery compartment.



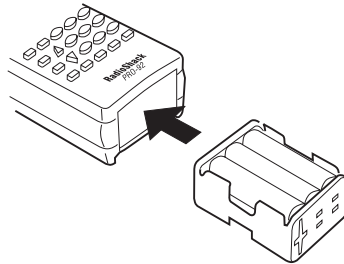
3. Insert six AA batteries in the battery holder as indicated by the polarity symbols (+ and -) marked on the holder.



Cautions:

- Use only fresh batteries of the required size and recommended type.
- Always remove old or weak batteries. Batteries can leak chemicals that destroy electronic circuits.
- Do not mix old and new batteries, different types of batteries (alkaline or rechargeable), or rechargeable batteries of different capacities.

4. Slide the battery holder into the compartment.



Caution: The battery holder fits only one way. Do not force it.

5. Replace the cover.

When battery power is low, **Low Battery!** appears and the scanner beeps continuously. When battery power is depleted, the scanner turns itself off. Replace all six non-rechargeable batteries, or recharge the rechargeable batteries. See "Charging Rechargeable Batteries".

Warning: Always dispose of old batteries promptly and properly. Do not bury or burn them.

Caution: If you do not plan to use the scanner with batteries for a month or longer, remove the batteries. Batteries can leak chemicals that can destroy electronic parts.

Charging Rechargeable Batteries

Your scanner has a built-in charging circuit that lets you charge rechargeable batteries (not supplied) while it is in the scanner. To charge rechargeable batteries connect an appropriate AC or DC adapter to the **PWR DC 9V** jack. We recommend RadioShack rechargeable batteries.

Note: To charge batteries with a DC adapter from a DC power source, you must use RadioShack Cat. No. 273-1825 and a size H Adaptaplug® (neither supplied) available at your local RadioShack store. Make sure the adapter's voltage is set to 10V.

It takes between 14–16 hours to recharge rechargeable batteries that are fully discharged. You can operate the scanner while recharging the rechargeable batteries, but charging takes longer.

Notes:

- The scanner can charge Ni-MH batteries, however, these batteries require more than 24-hours to charge. We recommend using an external quick charger for Ni-MH batteries.
- Additional charging time is required for high-capacity rechargeable batteries.

- Rechargeable batteries last longer and deliver more power if you let them fully discharge once a month. To do this, use the scanner until **Low Battery!** appears on the display. Then fully charge the rechargeable batteries.

Important: This scanner can use nickel-cadmium rechargeable batteries. At the end of a nickel-cadmium battery's useful life, it must be recycled or disposed of properly. Contact your local, county, or state hazardous waste management authorities for information on recycling or disposal programs in your area or call 1-800-843-7422. Some options that might be available are: municipal curbside collection, drop-off boxes at retailers such as your local RadioShack store, recycling collection centers, and mail-back programs.



Using AC Power

You can power the scanner using an 9V, 300 mA AC adapter and a size H Adaptaplug (neither supplied). We recommend RadioShack Cat. No. 273-1767 (available at your local RadioShack store).

Cautions:



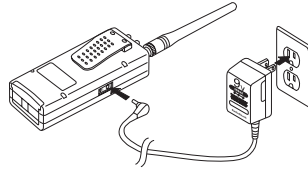
You must use a Class 2 power source that supplies 9V DC and delivers at least 300 mA. Its center tip must be set to negative and its plug must fit the scanner's **PWR DC 9V** jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.

- Always connect the AC adapter to the scanner before you connect it to AC power. When you finish, disconnect the adapter from AC power before you disconnect it from the scanner.

Follow these steps to connect the adapter.

1. Connect the Adaptaplug to the adapter's cord with the tip set to negative.

2. Plug the adapter's barrel plug into the scanner's **PWR DC 9V** jack.
3. Plug the adapter into a standard AC outlet.



Using Vehicle Power

You can power the scanner from a vehicle's 12V power source (such as a cigarette-lighter socket) using a 9V, 300 mA DC adapter and a size H Adaptaplug (neither supplied). We recommend RadioShack Cat. No. 273-1810 (available at your local RadioShack store).

Note: For charging batteries with an optional DC adapter from a DC power source, use RadioShack Cat. No. 273-1825 and a size H Adaptaplug (available at your local RadioShack store). Make sure the adapter's voltage is set to 10V.

Cautions:



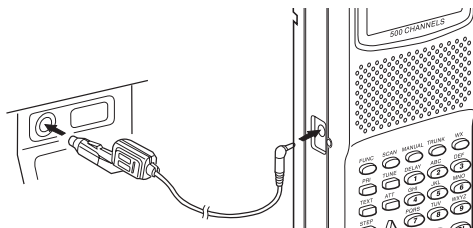
You must use a power source that supplies 9V DC and delivers at least 300 mA. Its center tip must be set to negative and its plug must fit the scanner's **PWR DC 9V** jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.

- Always connect the DC adapter to the scanner before you connect it to the power source. When you finish, disconnect the adapter from the power source before you disconnect it from the scanner.

Follow these steps to connect the adapter.

1. Connect the Adaptaplug to the adapter's cord with the tip set to negative.
2. Plug the adapter's barrel plug into the scanner's **PWR DC 9V** jack.

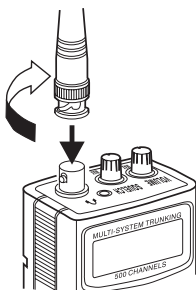
3. Plug the adapter's cigarette-lighter plug into your vehicle's cigarette-lighter socket.



Note: If the scanner does not operate properly when you connect a DC adapter, unplug the DC adapter from the cigarette-lighter socket and clean the socket to remove ashes and other debris.

CONNECTING THE ANTENNA

Follow these steps to attach the supplied flexible antenna to the **ANT** jack on the top of your scanner.



1. Align the slots around the antenna's connector with the tabs on the **ANT** jack.
2. Press the antenna down over the jack and turn the antenna's base clockwise until it locks into place.

Connecting an Optional Antenna


The antenna connector on your scanner makes it easy to use the scanner with a variety of antennas, such as an external mobile antenna or outdoor base station antenna. Your local RadioShack store sells a variety of antennas.

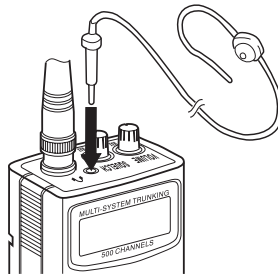
Always use 50-ohm coaxial cable, such as RG-58 or RG-8, to connect an outdoor antenna. For lengths over 50 feet, use RG-8 low-loss dielectric coaxial cable. If your antenna's cable does not have a BNC connector, you will also need a BNC adapter (also available at your local RadioShack store).

Follow the installation instructions supplied with the antenna, route the antenna cable to the scanner, then connect it to the **ANT** jack.

Warning: Use extreme caution when installing or removing an outdoor antenna. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna touches a power line, contact with the antenna, mast, cable or guy wires can cause electrocution and death! Call the power company to remove the antenna. Do not attempt to do so yourself.

CONNECTING AN EARPHONE/HEADPHONES

For private listening, you can plug an earphone or mono/stereo headphones (not supplied), available at your local RadioShack store, into the  jack on top of your scanner. This automatically disconnects the internal speaker.



Listening Safely

To protect your hearing, follow these guidelines when you use an earphone or headphones:


- Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.
- Once you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

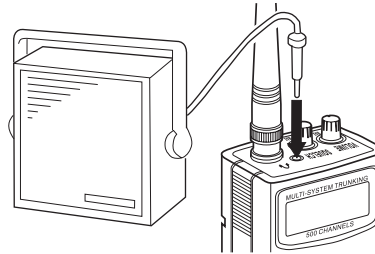
Traffic Safety

Do not wear an earphone or headphones while you drive a vehicle or ride a bicycle. This can create a traffic hazard and can be illegal in some areas.

Even though some earphones and headphones let you hear some outside sounds when you listen at normal levels, they still can present a traffic hazard.

CONNECTING AN EXTENSION SPEAKER

In a noisy area, an amplified speaker (not supplied), available at your local RadioShack store, might provide more comfortable listening. Plug the speaker cable's $\frac{1}{8}$ -inch (3.5-mm) mini-plug into your scanner's .



USING THE BELT CLIP

You can use the belt clip attached to the back of the scanner for hands-free carrying when you are on the go. Slide the belt clip over your belt or waistband.

CONNECTING THE CLONE CABLE

You can transfer the programmed data to and from another PRO-92 using the supplied clone cable. Connect the cable between each scanner's PC/IF jacks. See "Cloning the Programmed Data from Scanner to Scanner" on Page 56. You can also upload or download the programmed data to or from a PC using an optional PC interface kit available by special order from your local RadioShack store.

ABOUT YOUR SCANNER

Once you understand a few simple terms used in this manual and familiarize yourself with your scanner's features, you can put the scanner to work for you. You simply determine the type of communications you want to receive, then set the scanner to scan them.

A *frequency* is the receiving signal location (expressed in kHz or MHz). To find active frequencies, you can use the search function.

You can also search the SEARCH banks, which are pre-programmed frequencies in the scanner's memory (see "Searching a Preprogrammed Frequency Range" on Page 41 for the frequency list). You can change the SEARCH frequency ranges.

When you find a frequency, you can store it into a programmable memory location called a *channel*, which is grouped with your other channels in a *channel-storage bank*. You can then scan the channel-storage banks to see if there is activity on the frequencies stored there. Each time the scanner finds an active frequency, it stays on that channel until the transmission ends. See "Trunking Operation" on Page 57 for terms related to trunking systems.

A LOOK AT THE KEYPAD

Your scanner's keys might seem confusing at first, but this information should help you understand each key's function.



FUNC (function) — lets you use various functions by pressing this key along with other keys.

SCAN — scans through the programmed channels.

MANUAL — stops scanning and lets you directly enter a channel number.

TRUNK — stores the trunking ID code or holds the trunking ID while scanning.

WX — scans through the 7 preprogrammed weather channels.

PRI (priority) — sets and turns the priority function on or off.

TEXT — lets you input text.

STEP — changes the frequency step or displays step frequency during search, selects PL or DPL codes when programming.

MODE — changes the receive mode (AM, FM, PL, DL, LT, MO, ED. See "Changing the Receive Mode" on Page 53).

☐ / LIT (light) — turns on/off the display's backlight or locks/unlocks the keypad to prevent accidental entries.

TUNE — lets you input a frequency and allows you to fine tune a frequency along with ▲ or ▼.

ATT (attenuate) — turns attenuation on to reduce the scanner's sensitivity, or turns it off to increase it.

▲ or ▼ — selects the search direction during search or tuning to a frequency.

SEARCH — lets you search the ten search banks.

L/OUT (lock out) — lets you lock out a selected channel, lets you skip a specified frequency during search, or lets you lock out a selected ID code.

PGM — programs frequencies into channels.

ENTER — lets you complete the entry of frequencies and text.

1/DELAY — enters a 1, or programs a 2-second delay for the selected channel/search bank, or inputs characters 0 through 9.

2/ABC — enters a 2, or inputs characters A, B, or C.

3/DEF — enters a 3, or inputs characters D, E, or F.

4/GHI — enters a 4, or inputs characters G, H, or I.

5/JKL — enters a 5, or inputs characters J, K, or L.

6/MNO — enters a 6, or inputs characters M, N, or O.

7/PQRS — enters a 7, or inputs characters P, Q, R, or S.

8/TUV — enters a 8, or inputs characters T, U, or V.

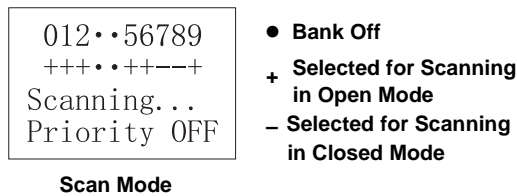
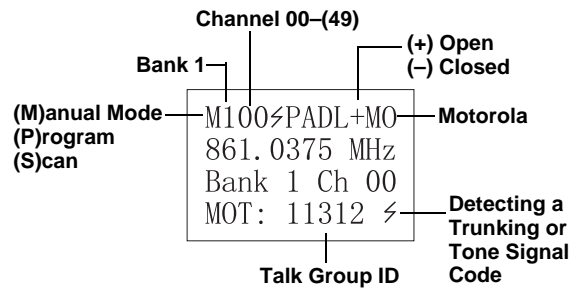
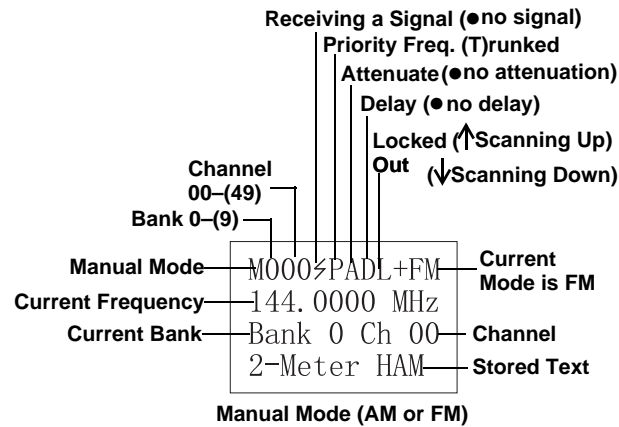
9/WXYZ — enters a 9, or inputs characters W, X, Y, or Z.

0 — enters a zero, or inputs characters ., -, #, _, @, +, *, &, /, ', \$, %, !, ^, (,), ?, →, ~, and ^.

• — enters a decimal point (necessary when programming frequencies), space, or hyphen (in Motorola type I code setting).

CL — clears an incorrect entry.

A LOOK AT THE DISPLAY



012345 • • 89 6 and 7 are turned off
Search up...
Priority OFF
Search Mode

**Searching
Frequency
for Range
in Bank 3**
Delay Scanning Up
Search Mode — SR-3 ↯ • • D ↑ • AM — **AM**
Upper Limit — 122.4500 MHz
Stepping — 25.0 kHz
Aircraft

Search Bank 5
Search Mode — SR-5 ↯ • • D ↑ • MO — **Motorola**
866.1250 MHz
12.5 kHz
MOT: 13456 ↯

UNDERSTANDING BANKS

Channel Storage Banks

To make it easier to identify and select the channels you want to listen to, channels are divided into 10 banks (0–9) of 50 (00 to 49) channels each. Use each channel-storage bank to group frequencies, such as those used by the police department, fire department, ambulance services, or aircraft (see “Guide to the Action Bands” on Page 67). For example, the police department might use four frequencies, one for each side of town. You could program the police frequencies starting with 000 (the 1st channel in bank 0) and program the fire department frequencies starting with 100 (the 1st channel in bank 1). The 1st digit identifies the bank (0–9). The 2nd and 3rd digits identify the channel within the bank (00–49).

Search Banks

This scanner is able to search 10 search banks. You can also replace a bank with one of the 60 pre-programmed service bands. (For the default setting, see “Searching a Preprogrammed Frequency Range” on Page 41).

The following list shows the 60 pre-programmed service bands

| Low Freq. (MHz) | Hi Freq. (MHz) | Step (kHz) | Description |
|--------------------|-------------------|---------------|-----------------|
| 118.0000 | 136.9750 | 25 | Air Band |
| 108.0000 | 118.0000 | 25 | Air Nav |
| 460.6375 | 460.8625 | 25 | Airlines |
| 460.8750 | 460.9750 | 25 | Alarms |
| 944.0000 | 952.0000 | 12.5 | Broadcast Links |
| 42.9600 | 43.6800 | 20 | Business |
| 151.9850 | 153.7250 | 5 | Business |

| Low Freq. (MHz) | Hi Freq. (MHz) | Step (kHz) | Description |
|--------------------|-------------------|---------------|--------------|
| 450.9250 | 452.1875 | 25 | Business |
| 453.9875 | 454.9875 | 25 | Business |
| 460.9750 | 462.5500 | 25 | Business |
| 463.1750 | 465.0000 | 25 | Business |
| 851.0000 | 866.0000 | 12.5 | Business |
| 935.0000 | 944.0000 | 12.5 | Business |
| 33.0400 | 33.9800 | 20 | Fire |
| 29.7000 | 33.0400 | 5 | Fixed/Mobile |
| 33.9800 | 42.0200 | 20 | Fixed/Mobile |
| 46.6000 | 50.0000 | 20 | Fixed/Mobile |
| 928.0000 | 929.0000 | 12.5 | Fixed |
| 932.0000 | 935.0000 | 12.5 | Fixed |
| 952.0000 | 960.0000 | 12.5 | Fixed |
| 462.5500 | 462.7500 | 12.5 | GMRS/FRS |
| 467.5500 | 467.7500 | 12.5 | GMRS/FRS |
| 137.0000 | 144.0000 | 5 | Government |
| 148.0000 | 150.7750 | 25 | Government |
| 153.7250 | 156.2500 | 5 | Government |
| 158.6700 | 159.4650 | 5 | Government |
| 162.0000 | 173.2250 | 5 | Government |
| 173.4000 | 174.0000 | 5 | Government |
| 400.0000 | 420.0000 | 25 | Government |
| 453.0000 | 453.9875 | 25 | Government |
| 29.0000 | 29.7000 | 5 | Ham 10 m |
| 50.0000 | 54.0000 | 5 | Ham 6 m |

| Low Freq. (MHz) | Hi Freq. (MHz) | Step (kHz) | Description |
|--------------------|-------------------|---------------|--------------|
| 144.0000 | 148.0000 | 20 | Ham 2 m |
| 420.0000 | 450.0000 | 25 | Ham 70 cm |
| 902.0000 | 928.0000 | 12.5 | Ham/ISM 33cm |
| 150.9650 | 151.9850 | 5 | Highways |
| 462.9250 | 463.1750 | 25 | Medical |
| 156.2500 | 157.4250 | 25 | Marine Band |
| 161.7600 | 161.9150 | 25 | Marine Band |
| 380.0000 | 400.0000 | 50 | Military |
| 806.0000 | 823.9875 | 12.5 | Mobile Units |
| 894.0000 | 902.0000 | 12.5 | Mobile Units |
| 161.5650 | 161.7600 | 5 | News Media |
| 173.2250 | 173.4000 | 5 | News/Film |
| 450.0000 | 450.9250 | 12.5 | News Media |
| 452.9625 | 452.9875 | 25 | Newspapers |
| 462.7500 | 462.9250 | 25 | Paging |
| 929.0000 | 932.0000 | 12.5 | Paging |
| 42.0200 | 42.9600 | 20 | Police |
| 44.6000 | 46.6000 | 20 | Police/Fire |
| 460.0000 | 460.6375 | 25 | Police/Fire |
| 866.0000 | 868.9875 | 12.5 | Police/Fire |
| 160.2150 | 161.5650 | 15 | Railroads |
| 455.0000 | 460.0000 | 25 | Reptr Inputs |
| 465.0000 | 470.0000 | 25 | Reptr Inputs |
| 157.4250 | 158.6700 | 5 | Taxi/Tow |
| 159.4650 | 160.2150 | 5 | Taxi |

| Low Freq. (MHz) | Hi Freq. (MHz) | Step (kHz) | Description |
|--------------------|-------------------|---------------|-------------|
| 452.1875 | 452.9625 | 25 | Taxi/Busses |
| 470.0000 | 512.0000 | 12.5 | T-Band |
| 150.7750 | 150.9650 | 5 | Tow Trucks |

Note: The steps shown above are default values. You can select any desired step setting.

UNDERSTANDING YOUR PRO-92'S MODES

You can program each channel with any of seven receive modes. Each mode affects how your scanner operates when scanning and receiving transmissions, and also affects what transmissions you receive when you set the scanner to the Closed mode (see "Open and Closed Modes" on Page 63). The following sections describe each mode and how they affect your scanner's operation. See "Changing the Receive Mode" on Page 53.

PL, DPL and trunking systems all use some form of *coded squelch*. Coded squelch techniques involve the transmission of a special "code" signal along with the audio of a radio transmission. A receiver with coded squelch only activates when the received signal has the correct "code." This lets many users share a single frequency, and decreases interference caused by distant transmitters on the same channel.

In all major metropolitan areas of the United States, every available radio channel is assigned to more than one user. Public safety radio systems on the same frequency are usually set up at a distance of forty miles apart, or more. This means that you may hear transmissions from a distant system when your local system is not transmitting. By entering the PL for a local system, and operating the bank in closed mode, the scanner will not stop on transmissions from the distant system.

With few exceptions, such as the VHF Aircraft and Marine bands, almost every other VHF or UHF radio system uses some form of coded squelch. By far, PL is the most popular mode among non-trunked systems. For most scanning use, try setting PL mode for all non-trunked channels. If you operate the bank in open mode, the scanner will display the appropriate code.

AM Mode

This sets the scanner to receive transmissions using amplitude modulation (AM). AM is used for aircraft, military, some amateur radio, and some government transmissions. When the scanner receives a transmission on a channel set to the AM mode, it always stops on the transmission.

FM Mode

This sets the scanner to receive transmissions using frequency modulation (FM). FM is used for most public safety transmissions, as well as broadcast, business, and amateur radio transmissions. When the scanner receives a transmission on a channel set to the FM mode, it always stops on the transmission.

CODED SQUELCH MODES (PL, DPL, AND TRUNKING)

PL Mode

This sets the scanner to decode subaudible tones that are transmitted with many FM transmissions. Radio system users use these tones to allow multiple users to share a single frequency and to prevent interference from other systems operating nearby on the same frequency. When you select the PL mode for a channel, you can also set a specific PL tone for that channel.

When the scanner receives a transmission on a channel set to the PL mode, it first decodes the PL tone included with the transmission. In the Open mode, the scanner stops on the transmission and displays the PL tone on the bottom line of the display (or displays None if no tone is included). In the Closed mode, the scanner only stops on the transmission if the PL tone matches the tone that you specified for the channel.

PL tones range in frequency from 67 Hz to 254.1 Hz. You select a PL tone by pressing **STEP** while programming a channel.

DPL Mode

This sets the scanner to decode digital PL tones used with some FM transmissions. Similar to PL, DPL is a digital "signature" encoded on a subaudible carrier. In addition to preventing interference from other nearby radio systems, DPL can also identify a specific user or group of users on a radio system. When you select the DPL mode for a channel, you can also set a specific DPL code for that channel.

When the scanner receives a transmission on a channel set to the DPL mode, it first decodes the DPL code included with the transmission. In the Open mode, the scanner stops on the transmission and displays the DPL code on the bottom line of the display (or displays None if no code is included). In the Closed mode, the scanner only stops on the transmission if the DPL code matches the code that you specified for the channel.

DPL codes range from D017 to D754 (only 100 codes are actually used within this range). You select a DPL code by pressing **STEP** while programming a channel.

DPL is not as popular as PL, because the effective range of DPL-encoded signals is less than PL.

LTR (E. F. Johnson) Mode

This sets the scanner to decode the talk group ID's used with an LTR system. This is a trunking system used primarily by business or private communications service providers, such as taxi cabs, delivery trucks, and repair services. LTR systems encode all trunking information as digital subaudible data that accompanies each transmission. Users on an LTR system are assigned to specific talk groups, which are identified by the radio as a six-digit number. The number is in the form:

AHHUUU

Where:

A = Area code (0 or 1)

H = Home repeater (01 through 20)

U = User ID (000 through 254)

When the scanner receives a transmission on a channel set to the LTR mode, it first decodes the LTR data included with the transmission. In the Open mode, the scanner stops on the transmission and displays the talk group ID on the bottom line of the display. In the Closed mode, the scanner only stops on the transmission if the LTR data matches a talk group ID that you have stored in the bank's talk group ID list and have not locked out.

LTR systems are frequently programmed so that each radio has a unique ID code.

Motorola Mode

This sets the scanner to decode the talk group ID's used with Motorola trunking systems. These systems are used by business and public safety groups to efficiently allocate a small number of frequencies (as few as 5) to many groups of users (as many as several thousand). To do this, each group of users in the system is assigned to a specific talk group. For example, the east side patrol officers might all be assigned to talk group 2160. One channel in the system is continuously transmitting data that identifies which talk groups are active on which channel.

In addition, this talk group information is also transmitted as subaudible data on each active channel.

When the scanner receives a transmission on a channel set to the Motorola mode, it first decodes the talk group ID data included with the transmission. In the Open mode, the scanner stops on the transmission and displays the talk group ID on the bottom line of the display. In the Closed mode, the scanner only stops on the transmission if the talk group ID matches a talk group ID that you have stored in the bank's talk group ID list and have not locked out.

Motorola trunking systems come in three flavors: Type I, Type II, and Type I/II Hybrids. Each type displays and uses talk group ID's in slightly different ways.

Motorola Type I ID's are in the form FFF-SS, where:

FFF= Fleet ID

SS= Subfleet ID

Type I systems are usually organized with different user groups assigned to different fleets. For example, all police users might be grouped under fleet 000. Then, within each fleet, subfleet ID's are assigned to subgroups of the main user group.

For example, Police — East Patrol might be assigned to group 12, making the full Fleet, Subfleet ID be 000-12. To properly map the raw Type I data to the correct fleet-sub-fleet format, you must program the correct fleet map into the scanner. Fleet map information is widely available on the internet for most Type I systems in use.

Type II systems talk groups are identified by a 5-digit number. Valid talk group IDs are divisible by 16. If you try to enter an invalid talk group ID, the scanner rounds the ID down to the next valid ID.

Type I/II hybrid systems use both fleet-subfleet and 5-digit formats for talk group ID's.

Note: Since the subaudible data is included with every transmission, you can generally receive Motorola systems from further away than when using systems that only decode the data channel (like the EDACS mode). However, as the signal quality worsens, or if the signal is subject to interference, the scanner might not be able to reliably decode the talk group ID. In this case, you might occasionally notice that the talk group ID changes during a transmission.

EDACS Mode

This sets the scanner to decode the talk group ID's used with an EDACS (GE/Ericsson) system. This is a trunking system used primarily by business or private communications service providers, as well as by some public safety organizations. EDACS systems transmit active talk group information only on a dedicated control channel.

EDACS frequencies are organized in a specific order. Each frequency is assigned a Logical Channel Number (LCN). For the PRO-92 to correctly switch to an active frequency, you must program the frequencies in LCN order, starting with Memory 01. EDACS talk group ID's are entered as a 4-digit decimal number from 0000 to 4096.

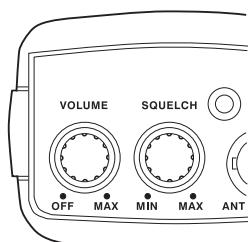
When there is activity on an EDACS system, that information is sent out on the control channel. The scanner decodes the ID for the active talk group. In the Open mode, the scanner then goes to the transmission and displays the talk group ID on the bottom line of the display. In the Closed mode, the scanner only goes to transmissions that have ID's that match a talk group ID that you have stored in the bank's talk group ID list and have not locked out.

Because EDACS scanning requires you to have clear reception of the control channel at all times, EDACS systems tend to have a smaller usable area. An external antenna can greatly improve EDACS scanning in a fringe area. If you are having trouble scanning an EDACS system, try manually selecting the data channel. If you are getting good reception, the scanner will indicate talk group CTR-01. Try changing your location or using an outdoor antenna to improve reception.

OPERATION

TURNING ON THE SCANNER AND SETTING SQUELCH

1. Turn **SQUELCH** fully counterclockwise until the indicator points to **MIN** before you turn on the scanner.



2. To turn on the scanner, turn **VOLUME** clockwise. **Welcome To Multi-System Trunking** appears on the display. After about 3 seconds, you hear a hissing sound.

Welcome To
Multi-System
Trunking

3. Turn **SQUELCH** clockwise, just until the hissing sound stops.

Notes:

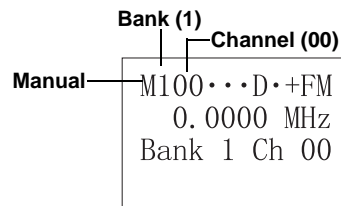
- To listen to a weak or distant station, turn **SQUELCH** counterclockwise. If reception is poor, turn **SQUELCH** clockwise to cut out weak transmissions.
 - If **SQUELCH** is adjusted so you always hear a hissing sound, the scanner does not scan.
4. To turn off the scanner when you finish, turn **VOLUME** counterclockwise to **OFF**.

STORING KNOWN FREQUENCIES INTO CHANNELS

Good references for active frequencies are the RadioShack *Police Call*, *Aeronautical Frequency Directory*, and *Maritime Frequency Directory*. We update these directories every year, so be sure to get a current copy. Also see the supplied *Police Call Trunking Guide*.

Follow these steps to store frequencies into channels.

1. Press **MANUAL**, enter the channel number where you want to store a frequency, then press **MANUAL** again. **M** and the channel number appears at the upper left corner on the display (for example: M100).



2. Press **PGM**. **M** changes to **P** on the display.
3. Use the number keys and **•** to enter the frequency (including the decimal point) you want to store.

If you make a mistake, hold down **CL** for about 0.5 seconds to delete a single digit and about 1.5 seconds to delete all digits.

4. Press **ENTER** to store the frequency into the channel. The blinking cursor disappears.

Notes:

- If you made a mistake in Step 3, **Invalid Freq** briefly appears and the scanner beeps when you press **ENTER**. Start again from Step 3.

- Your scanner automatically rounds the entered frequency to the nearest valid frequency. For example, if you enter a frequency of 151.473, your scanner accepts it as 151.470.
 - Press **FUNC** then press **DELAY/1** to turn the delay function on or off. If you want the scanner to pause 2 seconds on this channel after a transmission ends before it proceeds to the next active transmission, see "Using the Delay Function" on Page 48. The scanner also stores this setting in the channel.
 - If you are storing frequencies for an EDACS system, you must store them in logical channel number order, with the first frequency in channel 1 for the current bank.
5. If necessary, press **MODE** to change the receiving mode. If you select **P/L** or **DPL**, enter the PL or DPL code by pressing **STEP** (to move through the codes upward) or **FUNC** then press **STEP** (to move downward through the codes).
 6. If desired, program a text tag for the channel (see "Assigning a Text Tag to a Channel").
 7. The next channel in sequence is ready for programming. Press **PGM** and then repeat Steps 3 through 5.

STORING TEXT TAGS

You can customize your scanner by storing text tags (up to 12 characters) for easy identification of channel transmissions, trunk ID's, or banks.

Assigning a Text Tag to a Channel

To input the text, follow these steps:

1. Press **MANUAL**, enter the channel number where you want to enter the text, then press **MANUAL** again. **M** and the channel number appear at the upper left corner on the display (for example: M100).
2. Pressing **PGM** changes **M** to **P** on the display.

3. Press **TEXT**. The cursor appears at the 3rd line on the display.
4. Enter the text using the numeral keys (see "Text Input Chart" on Page 39).

Note: If you make a mistake, press **↵** or **⬅** to move to the character you want to change.

For example input "HAM 6m" as follows:

- "H" is the second letter associated with 4 on the keypad. Press **4** then press **2**.
- "A" is the first letter associated with 2 on the keypad. Press **2** then press **1**.
- "M" is the first letter associated with 6 on the keypad. Press **6** then press **1**.
- "space" Press **•**.
- "6" is the sixth number associated with 1 on the keypad. Press **1** then press **6**.
- "m" is the first letter associated with 6 on the keypad. Press **6** and **FUNC** (for the lower case set), then press **1**.

5. Press **ENTER** to input the text.

Assigning a Text Tag to a Bank

1. Press **PGM**.
2. Select a channel within the desired bank by pressing **MANUAL** and entering the bank number (000 for bank 0 or 200 for bank 2, for example). Press **MANUAL** again, then press **PGM**.
3. Press **FUNC** then press **6**. The cursor appears at the 3rd line on the display. Enter the text using the keypad and press **ENTER**.

P100...D...FM
Bank name:



Note: If the channel is programmed for P/L, DPL, LTR, MOT or ED mode, the scanner displays the mode information on the 4th line.

Text Input Chart

Notes:

- To access the numbers, after you press **FUNC** and **6**, press **1**, then press the desired number you want to enter.
- To enter a lowercase character or a character from the second set for key **0**, press **FUNC** after pressing the first numeral key.

| Press | To Enter a Character from this Group |
|--------|--------------------------------------|
| 1 | 1, 2, 3, 4, 5, 6, 7, 8, 9, 0 |
| 2 | A, B, C |
| FUNC 2 | a, b, c |
| 3 | D, E, F |
| FUNC 3 | d, e, f |
| 4 | G, H, I |
| FUNC 4 | g, h, i |
| 5 | J, K, L |
| FUNC 5 | j, k, l |
| 6 | M, N, O |
| FUNC 6 | m, n, o |
| 7 | P, Q, R, S |
| FUNC 7 | p, q, r, s |
| 8 | T, U, V |

| Press | To Enter a Character from this Group |
|---------------|--------------------------------------|
| FUNC 8 | t, u, v |
| 9 | W, X, Y, Z |
| FUNC 9 | w, x, y, z |
| 0 | ., -, #, _, @, +, *, &, /, ' |
| FUNC 0 | \$, %, !, ^, (,), ?, →, ~, ^ |
| . | Space |
| CL | Back Space |

FINDING AND STORING ACTIVE FREQUENCIES

You can search for transmissions within ten ranges of frequencies, called a search bank. The search bank is divided into 10 search bands. You can change the bands with the 60 preprogrammed search bands in the scanner (see "Search Banks" on Page 25). You can also change the search bank's search ranges manually.

Notes:

- You can use the scanner's delay feature while searching the service bank. See "Using the Delay Function" on Page 48.
- The scanner does not search locked-out frequencies while searching ranges.

Searching a Preprogrammed Frequency Range

The scanner contains these preprogrammed search ranges, stored in search banks (0–9).

| Search Bank | Search Range (MHz) | Description |
|-------------|--------------------|-------------|
| 0 | 460–460.625 | Police |
| 1 | 153.725–156.000 | Police/Fire |
| 2 | 462.925–463.175 | Medical |
| 3 | 118.000–136.00 | Aircraft |
| 4 | 156.250–157.425 | Marine |
| 5 | 866.000–868.9875 | 800 MHz |
| 6 | 50.000–54.000 | 6 Meter Ham |
| 7 | 144.000–148.000 | 2 Meter Ham |
| 8 | 440.000–450.000 | 70 cm Ham |
| 9 | 462.550–462.725 | User Bank |

Follow these steps to select preprogrammed search ranges and search them for active frequencies.

1. Press **SEARCH**. The scanner searches active search bank.

Current
Search
Bank

0

123456789

Search up...

Priority OFF

Note: To reverse a search direction, press ▲ or ▼.

2. Using the number keys, enter the search bank number for each search range you want to select or remove.

3. When the scanner finds an active frequency, it stops searching. To save the frequency into a channel in the channel storage bank (bank 9 only), press **FUNC** then press **ENTER**. **Stored @ 9xx** appears on the display (xx: channel number). Press **▼** or **▲** to continue searching for additional active frequencies.

Notes:

- During search, you can manually change the band mode or frequency step. See "Changing the Receive Mode" on Page 53 or "Changing the Frequency Step" on Page 54.
- If bank 9 in the channel storage banks does not contain any empty channels, **Bank 9 full** appears on the display's lower line.
- To pause the search, press **FUNC** then press **STEP**. **** PAUSED **** appears on the display and the scanner stops frequency search. To begin searching again, press **FUNC** then press **STEP** or just press **SEARCH**.

Storing a Frequency While Searching for a Specified Channel

Follow the steps to store a frequency into a specified channel.

1. When the scanner stops on the frequency, press **FUNC**.
2. Press **TUNE**.
3. Press **MANUAL**. Select the specified channel using a number key then press **MANUAL** again.
4. Press **PGM**.
5. Press **FUNC**, then press **TUNE** to store the frequency.
6. If desired, press **SEARCH** to return to the search mode.

Changing a Search Range with One of the 60 Preprogrammed Ranges

You can replace the search range with one of the 60 pre-programmed ranges.

1. Press **FUNC** then press **SEARCH** to enter search program mode. **PSR** and the search bank number of the current range appear at the display's upper left corner.

```
PSR0...D•+PL
460.0000 MHz
460.6250 MHz
25.0 kHz
```

2. Press **▲** or **▼** to select the desired search bank you want to replace.
3. Press **FUNC** then press **5. ?SR** and the search bank number appear at the display's upper left corner.

```
?SR0...D•+AM
118.0000 MHz
136.9750 MHz
Air Band
```

Note: After you press **FUNC**, press **5** within about 3 seconds. Otherwise, begin over at Step 1.

4. Press **▲** or **▼** to select the preprogrammed search range.
5. Press **ENTER** to replace the search range.

Manually Changing a Search Range

Follow these steps to change the search range manually:

1. Press **FUNC** then press **SEARCH** to enter search program mode. **PSR** and a search bank number appear at the display's upper left corner.
2. Press **▲** or **▼** to select the search bank number.

3. Use the number keys to enter the lower range you want to search and store, then press **ENTER** to store the frequency.
4. Use the number keys to enter the higher range you want to search and store, then press **ENTER** again to store the frequency.

Notes:

- If you enter a higher frequency first then enter a lower frequency, the scanner automatically exchanges the frequencies on the display. It displays the lower frequencies first and the higher frequency second.
 - You cannot span across frequency bands. When manually setting search ranges, if you enter frequencies on different bands, the scanner does not accept the entry.
5. To text tag the search range, press **TEXT**, then enter the text. If want to edit existing text, press **▲** or **▼** to move across the text. Enter the appropriate text and press **ENTER**.

SCANNING THE CHANNELS

To begin scanning channels or to start scanning again after monitoring a specific channel, press **SCAN**.

Note: You must store frequencies into channels before the scanner can scan them. The scanner does not scan empty channels.

The scanner scans through all channels (except those you have locked out) in the active banks (see "Turning Channel-Storage Banks Off and On" and "Locking Out Channels or Frequencies" on Page 48).

Turning Channel-Storage Banks Off and On

To turn off banks while scanning, press the bank's number key until the bank's number disappears. The scanner does not scan any of the channels within the banks you have turned off.

Notes:

- You cannot turn off all banks. There must be at least one active bank.
- You can manually select any channel in a bank, even if the bank is turned off.

To turn on banks while scanning, press the number key until the bank's number appears.

MANUALLY TUNING A FREQUENCY

If desired, you can locate a frequency manually.

To tune to the frequency, follow these steps:

1. Press **TUNE**.
2. Use the number keys to enter the frequency.
3. Press **ENTER**.
4. Press **▲** to move up one tuning step. Press **▼** to move down one tuning step. To move up or down in 1 MHz increments, press **FUNC** then press **▲** or **▼**. To save the frequency into a channel (bank 9 only), press **FUNC** then press **ENTER**. **Stored @ 9xx** appears on the display (xx: channel number).

When the scanner stops on a frequency while searching, press **FUNC** then press **TUNE**. Press **▲** or **▼** to tune the frequency.

Notes:

- The PRO-92 cannot change the step frequency when it is in the tune mode.
- You can change the receiving mode in the tune mode.

DELETING FREQUENCIES FROM CHANNELS

1. Press **MANUAL**.
2. Use the number keys to enter the channel which has the frequency you want to delete.
3. Press **MANUAL** again.
4. Press **PGM** to enter the program mode. **M** changes to **P** on the display.
5. Press **FUNC**.
6. Press **CL**. The frequency number changes and the display shows **0.0000 MHz**.

LISTENING TO THE WEATHER BAND

The FCC (Federal Communications Commission) has allocated channels for use by the National Oceanic and Atmospheric Administration (NOAA). Regulatory agencies in other countries have also allocated channels for use by their weather reporting authorities.

NOAA and your local weather reporting authority broadcast your local forecast and regional weather information on one or more of these channels.

Listening to a Weather Channel

To hear your local forecast and regional weather information, press **WX**. Your scanner scans through the weather band. Your scanner stops within a few seconds on your local weather broadcast.

Weather Alert Feature

This scanner can detect both the weather alert tone and can decode the digital SAME message that precedes each alert. If you are monitoring a weather channel when an alert is broadcast, the scanner sounds an alert and displays the type of alert being broadcast.

The weather service precedes each weather alert with a digitally-encoded SAME signal, then a 1050 Hz tone. The PRO-92 responds to each signal. You can receive weather alerts any of three ways.

- Press **WX** to listen to the weather channel.

Note: The scanner only responds to the SAME signal in this mode.

- Select a weather channel as the priority channel, then turn on the priority feature.

Note: The scanner only responds to the 1050 Hz tone in the mode.

- Press **FUNC** then **WX** to select the **WX STANDBY** mode.

Notes:

- The scanner responds to either the SAME mode or 1050 Hz tone in this mode.
- In the WX STANDBY mode, the scanner remains muted until it receives an alert on the current weather channel.

When it decodes SAME, it displays the specific type of weather event (or **Tune to TV or Radio**) if it does not recognize the event code. When it detects the 1050 Hz tone, it displays **Weather Alert?** In either case, the scanner also sounds an alert tone.

To obtain SAME codes, visit the National Weather Service web site at:

<http://www.nws.noaa.gov/nwr/indexnw.htm#sametable>

SPECIAL FEATURES

USING THE DELAY FUNCTION

Note: The delay function turns on automatically when you turn on the scanner.

Many conversations might have a pause of several seconds between a query and a reply. To avoid missing a reply, you can program a 2-second delay into any of your scanner's channels. Then, when the scanner stops on the channel, **D** appears on the display and the scanner continues to monitor the channel for 2 seconds after the transmission stops before it resumes scanning or searching.

You can program a 2-second delay in any of three ways.

- *If the scanner is scanning and stops on an active channel, quickly press **FUNC** then press **DELAY** before it starts to scan again.*
- *If the desired channel is not selected, manually select the channel then press **FUNC** then press **DELAY**.*
- *If the scanner is searching and also stopped or paused, press **FUNC** then press **DELAY** to set a delay in a search bank.*

LOCKING OUT CHANNELS OR FREQUENCIES

You can scan existing channels or search frequencies faster by locking out channels or frequencies that have a continuous transmission, such as a weather channel.

Locking Out Channels

To lock out a channel while scanning, press **L/OUT** when the scanner stops on the channel. To lock out a channel manually, select the channel then press **L/OUT** until **L** appears on the display.

Notes:

- You can still manually select locked-out channels.
- If you lock out a channel that is set to a trunking mode, lockout is removed when you cycle power. This lets you easily temporarily lockout trunking data channels.

To remove the lockout from a channel, manually select the channel and press **L/OUT** until **L** disappears from the display.

Reviewing the Lock-Out Channels

To review the channels you locked out, press **MANUAL**. Press **FUNC** then press **L/OUT**. You must press **FUNC** then **L/OUT** to view each lock-out channel.

Locking Out Frequencies

To lock out a frequency during a search, press **L/OUT** when the scanner stops on the frequency. The scanner locks out the frequency, then continues searching.

Notes:

- The scanner does not store locked out frequencies during a search.
- You can lock out as many as 50 frequencies in each bank. If you try to lock out more, **Memory full!** appears on the display.
- If you lock out all frequencies in one search bank and only this search bank is activated, **Search up... All ranges locked out!** appears on the display and the scanner does not search.

Reviewing Locked-Out Frequencies

Follow these steps to review the frequencies within a search bank that you locked out:

1. Press **SEARCH** to start search.
2. Press **FUNC** then press **L/OUT**. The locked-out frequency appear on the display. If the search bank has no locked-out frequency, **L/O list is empty.** appears on the display.
3. Press **FUNC** then press **▲** to select a search bank and begin the search for locked out channels within that bank.
4. As you press **▲**, the scanner displays all locked-out frequencies within a bank.

Locked-out

SL-1...D...PL
155.5800 MHz

Clearing a Locked-Out Frequency

To clear a locked-out frequency, select that frequency in order to use the locked-out frequencies review function, then press **CL**.

The frequency is unlocked and **Unlocked** appears on the display for about 2 seconds. Then the next locked-out frequency appears. If all locked out frequencies are cleared within a bank, **L/O list is empty.** appears on the display.

Clearing All Lock Out Frequencies in a Search Bank

1. Press **SEARCH**.
2. Turn on only one search bank, the one in which you want to clear all locked-out frequencies.

3. Press **FUNC**, then press 4. **Confirm list clear? 1=YES Press other key for NO.** appears on the display. Press 1 to clear all lock-out frequencies and **List cleared** appears on the display for about 2 seconds. Press any key other than 1, to cancel clear.

PRIORITY

With the priority feature, you can scan through programmed channels and still not miss an important or interesting call on a specific channel. When a channel is selected as the priority channel and priority is turned on, the scanner checks that channel every 2 seconds, and stays on the channel if there is activity until the activity stops.

The scanner is preset to select Channel 00 in Bank 8 as the priority channel. You can program a different channel as the priority channel. Also, you can program a weather channel as the priority channel.

Notes:

- The priority feature does not operate while the scanner receives trunking frequencies.
- If you program a WX channel as the priority channel, the scanner stays in the priority channel only when the scanner detects the weather alert tone.

Follow these steps to program a channel as the priority channel.

1. Press **MANUAL**.
2. Use the number keys to enter the channel number you want to program as the priority channel. Then press **MANUAL** again.
3. Press **FUNC** then press **PRI**. **Pri** appears on the display to the right of the frequency.

M0084••D•+FM
146.8000 Pri
Bank 0 Ch 08

Note: This scanner cannot set a channel as the priority channel if the channel's receive mode is **LTR**, **MOT**, or **ED**.

Follow these steps to program a weather channel as the priority channel.

1. Press **WX**.
2. Select the weather channel you want to program as the priority channel.
3. Press **FUNC** then press **PRI**. **Pri** appears on the display to the right of the frequency.

To turn on the priority feature, press **PRI** while scanning. **Priority ON** (or **Priority WX** if you set the priority to a weather channel) appears for about 3 seconds then **P** appears. The scanner checks the priority channel every 2 seconds. It stays on the channel if there is activity (or if it detects a weather alert tone in priority wx mode), **Pri** appears and **S** or **M** changes to **P** on the display.

Notes:

- The **WX** priority is only for receiving a weather alert.
- When the scanner detects a 1050 Hz tone, the **WX** priority activates and you receive a weather alert.

To turn off the priority feature, press **PRI**. **Priority OFF** appears on the display and **P** disappears from the display.

Note: The priority channel is always active if it is in the closed mode, regardless of the open or closed setting for the bank. This means that if the priority channel is **PL**, and has a **PL** code stored for it, the priority function will not be active unless the priority signal has the matching **PL** code.

CHANGING THE RECEIVE MODE

The scanner is preset to the most common AM or FM receive mode for each frequency range. The preset mode is correct in most cases. However, some amateur radio transmissions and trunked systems do not operate in the preset mode. If you try to listen to a transmission when the scanner is not set to the correct receive mode, the transmission might sound weak or distorted.

If you want to listen to and watch the private line or trunking transmission in the closed mode, you need to change the receive mode. (PL, DPL, MOT, LTR, and ED all use FM).

You can change a receive mode by pressing **MODE**. The receive mode changes as follows:

| Display | Description |
|-----------|---|
| AM | AM Mode |
| FM | FM Mode |
| PL | FM Mode, Private Line (with 67.0–254.1 Hz PL code). |
| DL | FM Mode, Digital Private Line (with 3-digit DPL code). |
| LT | FM Mode, LTR Trunking System (with 6-digit ID code). |
| MO | FM Mode, Motorola Trunking System (with a 4- or 5-digit ID code). |
| ED | FM Mode, EDACS Trunking System (with 4-digit ID code). |

CHANGING THE FREQUENCY STEP

The scanner searches at a preset frequency step for each frequency range. Press **STEP** to change the step increment when moving between frequencies of a search band or follow these steps to change steps in a specific bank.

1. Press **SEARCH**.
2. Select a bank.
3. Press **FUNC** then **STEP**. ****PAUSED**** displays on Line 3.
4. Press **STEP** continuously until you reach the desired step.
5. Press **FUNC** then **STEP** to return to scanning.

These are the changeable frequency steps your scanner uses for each frequency range.

| Range (MHz) | Search Step (kHz) |
|------------------|--------------------------------|
| 29.000-54.000 | 5, 10, 15, 20, 25, 30, 50, 100 |
| 108.000-136.9875 | 12.5, 25, 50, 100 |
| 137.000-174.000 | 5, 10, 15, 20, 25, 30, 50, 100 |
| 380.000-512.000 | 12.5, 25, 50, 100 |
| 806.000-823.9875 | 12.5, 25, 50, 100 |
| 849.000-868.9875 | 12.5, 25, 50, 100 |
| 894.000-960.000 | 12.5, 25, 50, 100 |

USING THE ATTENUATOR

To reduce interference or noise caused by strong signals, you can reduce the scanner's sensitivity to these signals. Press **ATT** until **A** appears on the display to reduce the scanner's sensitivity on the current channel.

Note: If you turn on this feature, the scanner might not receive weak signals.

To turn off the attenuator, press **ATT** again. **A** disappears from the display.

This setting is stored for each channel.

USING THE DISPLAY BACKLIGHT

You can turn on the display's backlight for easy viewing in dimly lit areas. Press **LIT** to turn on the display light for 5 seconds. To turn off the light before it automatically turns off, press **LIT** again.

TURNING THE KEY TONE ON AND OFF

Each time you press any of the scanner's keys, the scanner sounds a tone. Follow these steps to turn the scanner's key tone off or on.

1. If the scanner is on, turn **VOLUME OFF/MAX** counter-clockwise until it clicks to turn it off.
2. Turn **VOLUME OFF/MAX** clockwise to turn it on. **Welcome To Multi-System Trunking** appears on the display.
3. To turn on the key tone, press 1 while the display shows **Welcome To Multi-System Trunking**. To turn off the key tone, press 2 while the display shows **Welcome To Multi-System Trunking**.

USING THE KEYLOCK

Once you program your scanner, you can protect it from accidental program changes by turning on the keylock feature. When the keypad is locked, the only controls that operate are **FUNC** and **↵ /LIT**.

Note: You cannot activate the keylock when in the middle of programming.

To turn on the keylock, press **FUNC** then press **↵/0 /LIT**. **Keyboard Locked** appears on the display for about 1 second. **Keyboard Locked** appears when you press any key after locking the keypad.

To turn off the keylock, press **FUNC** then press **↵/0 /LIT**. The scanner beeps once and **Keyboard Unlocked** appears on the display about 1 second.

CHANGING THE DISPLAY CONTRAST

1. Press **MANUAL**.
2. Press **FUNC** then press **9**. **Use Up/Down keys to set contrast.** appears on the display.
3. Press **▲** or **▼** to select the contrast.
4. Press **ENTER** to set the display contrast.

CLONING THE PROGRAMMED DATA FROM SCANNER TO SCANNER

You can transfer the programmed data to and from another PRO-92 using the supplied clone cable. To clone the data, follow these steps.

1. Turn on both scanners.
2. Connect the supplied clone cable to each scanner's **PC/IF** jack. **CLONE MODE UP to send, remove cable to exit** appears.
3. Press **▲**. **Yes=1, No=Other** appears.
4. Press **1** to send the data to the other unit or press any other key to cancel the operation.

The scanner sends the data. To exit the clone mode, remove the cable.

TRUNKING OPERATION

The PRO-92 scanner tracks transmissions that use the Motorola® Type I and Type II (such as Smartnet and Privacy Plus) and hybrid analog trunking systems, plus GE/Ericsson (EDACS) and EF Johnson (LTR) type systems, which are extensively used in many communication systems.

Trunking systems allocate a few frequencies to many different users. When the mobile unit transmits a signal, one frequency is chosen from among the allocated frequencies in that trunking system. The user's **ID talk group** is sent with the signal.

Trunking group frequencies are included in the supplied *Police Call Trunking Guide*. Frequency fleet map and talk group information is also widely available on the Internet, including at www.trunkscanner.com.

UNDERSTANDING TRUNKING

In the past, groups that transmit frequently, such as police departments, were restricted to transmitting on just a few frequencies. This resulted in heavy traffic and often required 2-way radio users to wait for a specific frequency to clear before transmitting.

Trunked systems allow more groups of 2-way radio users to use fewer frequencies. Instead of selecting a specific frequency to transmit on, a trunked system chooses one of several frequencies when the 2-way radio user presses PTT (push to talk). The system automatically transmits the call on that frequency, and also sends a code that identifies that 2-way radio user's transmission on a control channel.

This scanner lets you easily hear both the call and response transmissions for that 2-way radio user and therefore follow the conversation. For Motorola and LTR systems, the scanner uses the subaudible data sent with each transmission to identify talk groups. For EDACS, the scanner monitors the control channel between each transmission to identify talk groups.

PROGRAMMING TRUNKING FREQUENCIES

Program trunking frequencies just as you program normal, non-trunked frequencies, but store the appropriate mode (MO, ED, or LT) with each frequency.

Notes:

- EDACs systems must be stored in banks by themselves. You can, however, mix Motorola, or LTR and conventional channels in a bank.
 - During Trunking operation, lock out all data channels. (See “Locking Out Channels or Frequencies” on Page 48.)
1. Press **PGM** and select the bank, then press **TRUNK** to enter the ID program mode.
 2. Press **MODE** to select **LT** for EF Johnson, **MO** for Motorola or **ED** for EDACS (GE/Ericsson) system to scan. This sets the talk group ID decoding method to be used for the bank.

Note: If you programmed a Motorola Type I or Hybrid system, see “Programming Fleet Maps”.

PROGRAMMING FLEET MAPS

If you want to receive a Motorola Type I system, you need to set the fleet map.

Fleet maps are included along with other information about Motorola Type I systems on the Internet. To program the fleet map:

1. Press **PGM**.
2. Press **TRUNK**.
3. Press **FUNC**, **▲** or **▼** to select the bank.
4. Press **FUNC**.

5. Press **8** and the display below appears.

Block 0 size
code. Use 15
for type II.
S-00

6. Enter the size code information supplied with the Type I system information, referring to the instruction that appears on the display. If the information was not supplied, try these common fleet maps.

| B L O C K | Size Code | | | | | | | |
|-----------------------|-----------|----|-----|-----|-----|-----|-----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 0 | S11 | S4 | S4 | S12 | S4 | S3 | S10 | S1 |
| 1 | S11 | S4 | S4 | — | S4 | S10 | S10 | S1 |
| 2 | S11 | S4 | S4 | S4 | S12 | S4 | S11 | S2 |
| 3 | S11 | S4 | S4 | S4 | — | S4 | S4 | S2 |
| 4 | S11 | S4 | S4 | S4 | S4 | S12 | S4 | S3 |
| 5 | S11 | S4 | S4 | S4 | S4 | — | S4 | S3 |
| 6 | S11 | S4 | S12 | S4 | S4 | S12 | S4 | S4 |
| 7 | S11 | S4 | — | S4 | S4 | — | S4 | S4 |

| B L O C K | Size Code | | | | | | | |
|-----------------------|-----------|----|----|----|-----|-----|-----|-----|
| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 0 | S4 | S0 | S4 | S0 | S3 | S4 | S4 | S3 |
| 1 | S4 | S0 | S0 | S0 | S3 | S3 | S4 | S10 |
| 2 | S0 | S0 | S0 | S0 | S11 | S10 | S4 | S10 |
| 3 | S0 | S0 | S0 | S0 | S4 | S4 | S11 | S11 |

| B L O C K | Size Code | | | | | | | |
|-----------------------|-----------|----|----|----|----|-----|-----|-----|
| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 4 | S0 | S0 | S0 | S0 | S4 | S4 | S11 | S0 |
| 5 | S0 | S0 | S0 | S0 | S0 | S4 | S0 | S0 |
| 6 | S0 | S4 | S0 | S0 | S0 | S12 | S12 | S12 |
| 7 | S0 | S4 | S0 | S4 | S0 | — | — | — |

7. Enter the size code and press **ENTER** for each entry. If you make a mistake, press **CL** and enter the correct size code.

Note: The default setting of the bank is for Motorola Type II. However, after you set Type I and if you want to return to Type II, press **15** at Step 5.

8. To confirm the input, repeat Steps 1–6 and press **ENTER**. Each time you press **ENTER**, you confirm the size code. If you find an error, press **CL** and begin again at Step 1.

TALK GROUP ID'S

You can program up to 100 talk group ID's in each bank. When the scanner stops on a transmission in the LTR, Motorola, or EDACS mode, it checks to see if the ID has been stored. In the Closed mode, the scanner only stops on the transmission and displays its text tag if you have stored and not locked out the ID. In the Open mode, the scanner always stops on a transmission, but it displays the ID's text tag if you have stored the ID.

Storing Talk Group ID's

To store a talk group ID when scanning, press **TRUNK** when the scanner stops on a transmission. The bottom line changes to **ID#XXXX** indicating that the ID is stored.

Note: When you try to store more than 100 talk group ID's in a bank, **Memory full!** appears. Clear some talk group ID's in order to store new ones (see "Clearing Talk Group ID's" on Page 62).

Follow these steps to manually store talk group ID's or to edit a stored ID.

1. Press **PGM**.
2. Press **TRUNK**.
3. To select the bank you want to store the ID to, press **FUNC**, then press **▲** or **▼**.
4. Press **MODE** to select **LT**, **MO**, or **ED**.
5. Enter the talk group ID and press **ENTER**. If necessary, use the decimal point for a hyphen.

Note: If you made a mistake in Step 4, **Invalid ID** appears and the scanner beeps when you press **ENTER**. Start again at Step 3.

6. Press **TEXT** and enter the text tag for the ID and press **ENTER**.
7. To store the next ID memory in sequence, press **▲** and repeat Steps 4 and 5 to enter more IDs.
8. Press **SCAN** to start scanning.

Talk Group ID Hold

You can set your scanner to follow a trunking signal, which you wish to track while scanning. Hold down **TRUNK** more than 2 seconds. **ID hold ON.** appears on the display.

S2084••D•+M0
 850.6625 MHz
 Bank 2 Ch 08
 ID hold ON.

To release **ID hold ON.**, press **SCAN** or **TRUNK**.

Locking Out Talk Groups ID

Note: You can only lock out talk group ID's when the scanner is in the closed mode (see "Open and Closed Modes" on Page 63).

To lock out a talk group ID, follow these steps:

1. Press **PGM**.
2. Press **TRUNK**.
3. Press **FUNC**, **▲** or **▼** to move the desired bank.
4. Press **▲** or **▼** to select the ID memory.
5. Press **L/OUT** to lock out the ID. **L** appears on the display.
6. To remove the lock out from trunking ID, manually select the ID memory, and press **L/OUT** until **L** disappears from the display.

Reviewing Locked-Out Talk Group ID's

To review the talk group ID you locked out within a bank, follow these steps:

1. Press **PGM** then press **TRUNK**.
2. Press **FUNC** then press **L/OUT**. The locked out ID appears on the display. If the ID memory bank has no locked out ID, you hear the low beep tone.
3. Press **FUNC** then press **▲** or **▼** to select a search bank. Or, just press **▲** or **▼** to search for any lockout ID's in a bank.

Clearing Talk Group ID's

1. Press **PGM**, then press **TRUNK**.
2. Press **FUNC**, **▲** or **▼** to select ID memory.
3. Press **FUNC** then press **CL**.

Clearing All Talk Group ID's in One Bank

You can clear all talk group ID's within a bank. This lets you quickly delete all talk group ID's from a bank if, for example, you want to use the bank to store a different set of talk group ID's.

1. Press **PGM**.
2. Press **TRUNK** to enter a talk group ID memory mode.
3. Select a talk group ID bank using **FUNC**, **▲** or **▼**.
4. Press **FUNC**, then press **3**. **Confirm list clear ?1=YES Press other key for NO.** appears on the display.
5. Press **1** to clear the all talk group ID's within a bank.

Note: To cancel the deletion, press any key except **1**. **Please wait List cleared** appears on the display and the scanner returns to the talk group ID memory mode.

OPEN AND CLOSED MODES

When set to the open mode, the scanner only uses the ID list to look up ID text tags and stops on any ID code.

When set to the closed mode, the scanner stops only on signals that have an ID code that is found in the ID list for the bank.

Note: When you select a channel manually, any transmission opens squelch, regardless of the current mode.

Closed Mode

S0058••D•-FM
146.5000 MHz
Bank 0 Ch 05

The open or closed mode is set in each channel storage bank. + or – is displayed under the channel storage bank's number while scanning. Or, the status display shows the **OPEN/CLOSED** mode at the top line while the scanner is in manual mode or while the scanner is receiving a signal during scanning.

When no ID code is programmed into the scanner, it receives the signal in PL, DPL, LTR, MOT, or ED mode without regarding the open or closed mode. The scanner displays the detected ID code.

| Mode | Open | Closed |
|------------|--|--|
| PL and DPL | Accepts any PL and DPL. Displays the received tone. | Accepts only the PL or DPL stored in the channel. |
| MOT/ED/LTR | Stops on any transmission. If the ID is stored, displays the text tag, otherwise displays the talk group ID. | Only stops on transmission if the ID is stored. Displays the text tag. |

Changing the Open/Closed Mode

To change the OPEN/CLOSED mode, follow these steps:

1. Press **MANUAL**.
2. To select the channel-storage bank, press **FUNC** and ▲ or ▼.
3. Press **FUNC** then press 2. **Bank OPEN** or **Bank CLOSED** appears.
4. After that message disappears, the 10th right most digit at the top of the line of the display changes from + to – or – to +.
5. Repeat Steps 2–4 for each bank.

A GENERAL GUIDE TO SCANNING

Reception of the frequencies covered by your scanner is mainly "line-of-sight." That means you usually cannot hear stations that are beyond the horizon.

GUIDE TO FREQUENCIES

US Weather Frequencies

| | | |
|---------|---------|---------|
| 162.400 | 162.475 | 162.525 |
| 162.425 | 162.500 | 162.550 |
| 162.450 | | |

Ham Radio Frequencies

Ham radio operators often transmit emergency information when other means of communication break down. The chart below shows the frequencies the scanner receives that ham radio operators normally use:

| Wavelength | Frequencies (MHz) |
|------------|-------------------|
| 10-Meter | 29.000–29.700 |
| 6-Meter | 50.000–54.000 |
| 2-Meter | 144.000–148.000 |
| 70-cm | 420.000–450.000 |
| 33-cm | 902.000–928.000 |

Birdie Frequencies

Every scanner has birdie frequencies. Birdies are signals created inside the scanner's receiver. These operating frequencies might interfere with transmissions on the same frequencies. If you program one of these frequencies, you hear only noise on that frequency. If the interference is not severe, you might be able to turn **SQUELCH** clockwise to cut out the birdie.

This scanner's birdie frequencies (in MHz) are:

| | | | |
|----------|----------|----------|----------|
| 29.0000 | 147.7650 | 415.3375 | 475.2375 |
| 31.9500 | 150.1500 | 419.3375 | 479.2375 |
| 32.1000 | 151.7600 | 423.3250 | 483.2250 |
| 35.9400 | 155.7500 | 427.3125 | 487.2250 |
| 38.4000 | 159.7450 | 429.0500 | 491.2125 |
| 42.9750 | 163.7400 | 431.3125 | 495.2125 |
| 43.9300 | 167.7300 | 435.3000 | 499.2000 |
| 47.9250 | 171.5500 | 439.3000 | 503.2000 |
| 49.9200 | 383.3875 | 443.2875 | 507.1875 |
| 51.9150 | 387.3750 | 447.2875 | 511.1875 |
| 54.0000 | 391.3750 | 451.2750 | 814.7000 |
| 108.0000 | 395.3750 | 455.2750 | 818.0125 |
| 115.8125 | 399.3625 | 459.2625 | 820.1125 |
| 123.8000 | 403.3625 | 463.2625 | 823.2625 |
| 131.7875 | 407.3500 | 467.2500 | 944.0500 |
| 139.7750 | 411.3500 | 471.2500 | 960.0000 |
| 143.7700 | | | |

To find the birdies in your scanner, begin by disconnecting the antenna and moving it away from the scanner. Make sure that no other nearby radio or TV sets are turned on near the scanner. Use the search function and scan every frequency range from its lowest frequency to the highest. Occasionally, the searching will stop as if it had found a signal, often without any sound. This is a birdie. Make a list of all the birdies in you scanner for future reference.

GUIDE TO THE ACTION BANDS

Typical Band Usage

VHF Band

| | |
|-----------------|--------------------|
| Low Range | 29.00–50.00 MHz |
| 6-Meter Amateur | 50.00–54.00 MHz |
| U.S. Government | 137.00–144.00 MHz |
| 2-Meter Amateur | 144.000–148.00 MHz |
| High Range | 148.00–174.00 MHz |

UHF Band

| | |
|----------------------------------|--------------------|
| Military Aircraft | 380.00–384.00 MHz |
| U.S. Government | 406.00–420.00 MHz |
| 70-cm Amateur | 420.00–450.00 MHz |
| Low Range | 450.00–470.00 MHz |
| FM-TV Audio Broadcast, Wide Band | 470.000–512.00 MHz |
| 800 Band Law Enforcement | 806.00–824.00 MHz |
| Conventional Systems | 851.00–856.00 MHz |
| Conventional/Trunked Systems | 856.00–861.00 MHz |
| Public Safety | 866.00–869.00 MHz |
| Trunked Private/General | 894.00–960.00 MHz |

Primary Usage

As a general rule, most of the radio activity is concentrated on the following frequencies:

VHF Band

| Activities | Frequencies |
|------------------------------|---------------------|
| Government, Police, and Fire | 153.785–155.980 MHz |
| Emergency Services | 158.730–159.460 MHz |
| Railroad | 160.000–161.900 MHz |

UHF Band

| Activities | Frequencies |
|----------------------------------|---------------------|
| Land-Mobile "Paired" Frequencies | 450.000–470.000 MHz |
| Base Stations | 451.025–454.950 MHz |
| Mobile Units | 456.025–459.950 MHz |
| Repeater Units | 460.025–464.975 MHz |
| Control Stations | 465.025–469.975 MHz |

Note: Remote control stations and mobile units operate at 5 MHz higher than their associated base stations and relay repeater units.

BAND ALLOCATION

To help decide which frequency ranges to scan, use the following listing of the typical services that use the frequencies your scanner receives. These frequencies are subject to change, and might vary from area to area. For a more complete listing, refer to the RadioShack "Police Call," "Aeronautical Frequency Directory," and "Maritime Frequency Directory" available at your local RadioShack store.

Abbreviations Services

| | |
|------|---|
| AIR | Aircraft |
| BIFC | Boise (ID) Interagency Fire Cache |
| BUS | Business |
| CAP | Civil Air Patrol |
| CCA | Common Carrier |
| CSB | Conventional Systems |
| CTSB | Conventional/Trunked Systems |
| FIRE | Fire Department |
| HAM | Amateur (Ham) Radio |
| GOVT | Federal Government |
| GMR | General Mobile Radio |
| GTR | General Trunked |
| IND | Industrial Services |
| | (Manufacturing, Construction, Farming and Forest Products) |
| MAR | Military Amateur Radio |
| MARI | Maritime Limited Coast |
| | (Coast Guard, Marine Telephone,) |
| | Shipboard Radio and Private Stations) |
| MARS | Military Affiliate Radio System |
| MED | Emergency/Medical Services |
| MIL | U.S. Military |
| MOV | Motion Picture/Video Industry |
| NEW | New Mobile Narrow |
| NEWS | Relay Press (Newspaper Reporters) |
| OIL | Oil/Petroleum Industry |
| POL | Police Department |
| PUB | Public Services |
| | (Public Safety, Local Government and Forestry Conservation) |
| PSB | Public Safety |
| PTR | Private Trunked |
| ROAD | Road & Highway Maintenance |
| RTV | Radio/TV Remote Broadcast Pickup |
| TAXI | Taxi Services |
| TELB | Mobile Telephone |
| TELC | Cordless Phones |
| TELM | Telephone Maintenance |

TOW..... Tow Trucks
 TRAN..... Transportation Services
 (Trucks, Tow Trucks, Buses, Railroad, Other)
 TSB..... Trunked Systems
 TVn..... FM-TV Audio Broadcast
 USXX..... Government Classified
 UTIL..... Power & Water Utilities
 WTHR..... Weather

HIGH FREQUENCY (HF)

10-Meter Amateur Band

29.000–29.700..... HAM

VERY HIGH FREQUENCY (VHF)

VHF Low Band—(29–50 MHz—in 5 kHz steps)

29.900–30.550..... GOVT, MIL
 30.580–31.980..... IND, PUB
 32.000–32.990..... GOVT, MIL
 33.020–33.980..... BUS, IND, PUB
 34.010–34.990..... GOVT, MIL
 35.020–35.980..... BUS, PUB, IND, TELM
 36.000–36.230..... GOVT, MIL
 36.250..... Oil Spill Cleanup
 36.270–36.990..... GOVT, MIL
 37.020–37.980..... PUB, IND
 38.000–39.000..... GOVT, MIL
 39.020–39.980..... PUB
 40.000–42.000..... GOVT, MIL, MARI
 42.020–42.940..... POL
 42.960–43.180..... IND
 43.220–43.680..... TELM, IND, PUB
 43.700–44.600..... TRAN
 44.620–46.580..... POL, PUB
 46.600–46.990..... GOVT, TELC
 47.020–47.400..... PUB
 47.420..... American Red Cross
 47.440–49.580..... IND, PUB
 49.610–49.990..... MIL, TELC

6-Meter Amateur Band—(50–54 MHz)

50.000–54.000..... HAM

Aircraft Band—(108–137 MHz)

108.00–121.490..... AIR
 121.500..... AIR Emergency
 121.510–136.975..... AIR

U.S. Government Band (137–144 MHz)

137.000–144.000..... GOVT, MIL

2-Meter Amateur Band (144–148 MHz)

144.000–148.000..... HAM

VHF High Band (148–174 MHz)

| | |
|-------------------|---------------------------|
| 148.050–150.345 | CAP, MAR, MIL |
| 150.775–150.790 | MED |
| 150.815–150.980 | TOW, Oil Spill Cleanup |
| 150.995–151.475 | ROAD, POL |
| 151.490–151.955 | IND, BUS |
| 151.985 | TELM |
| 152.0075 | MED |
| 152.030–152.240 | TELB |
| 152.270–152.480 | IND, TAXI, BUS |
| 152.510–152.840 | TELB |
| 152.870–153.020 | IND, MOV |
| 153.035–153.725 | IND, OIL, UTIL |
| 153.740–154.445 | PUB, FIRE |
| 154.490–154.570 | IND, BUS |
| 154.585 | Oil Spill Cleanup |
| 154.600–154.625 | BUS |
| 154.655–156.240 | MED, ROAD, POL, PUB |
| 156.255–157.425 | OIL, MARI |
| 157.450 | MED |
| 157.470–157.515 | TOW |
| 157.530–157.725 | IND, TAXI |
| 157.740 | BUS |
| 157.770–158.100 | TELB |
| 158.130–158.460 | BUS, IND, OIL, TELM, UTIL |
| 158.490–158.700 | TELB |
| 158.730–159.465 | POL, PUB, ROAD |
| 159.480 | OIL |
| 159.495–161.565 | TRAN |
| 161.580–162.000 | OIL, MARI, RTV |
| 162.0125–162.350 | GOVT, MIL, USXX |
| 162.400–162.550 | WTHR |
| 162.5625–162.6375 | GOVT, MIL, USXX |
| 162.6625 | MED |
| 162.6875–163.225 | GOVT, MIL, USXX |
| 163.250 | MED |
| 163.275–166.225 | GOVT, MIL, USXX |
| 166.250 | GOVT, RTV, FIRE |
| 166.275–169.400 | GOVT, BIFC |
| 169.445–169.505 | Wireless Mikes, GOVT |
| 169.550–169.9875 | GOVT, MIL, USXX |
| 170.000–170.150 | BIFC, GOVT, RTV, FIRE |
| 170.175–170.225 | GOVT |
| 170.245–170.305 | Wireless Mikes |
| 170.350–170.400 | GOVT, MIL |
| 170.425–170.450 | BIFC |
| 170.475 | PUB |
| 170.4875–173.175 | GOVT, PUB, Wireless Mikes |
| 173.225–173.5375 | MOV, NEWS, UTIL, MIL |
| 173.5625–173.5875 | MIL, Medical/Crash Crews |
| 173.600–173.9875 | GOVT |

ULTRA HIGH FREQUENCY (UHF)

U. S. Government Band (406–420 MHz)

406.125–419.975 GOVT, USXX

70-cm Amateur Band (420–450 MHz)

420.000–450.000 HAM

Low Band (450–470 MHz)

450.050–450.925 RTV
 451.025–452.025 IND, OIL, TELM, UTIL
 452.0375–453.00 IND, TAXI, TRAN TOW, NEWS
 453.0125–454.000 PUB, OIL
 454.025–454.975 TELB
 455.050–455.925 RTV
 457.525–457.600 BUS
 458.025–458.175 MED
 460.0125–460.6375 FIRE, POL, PUB
 460.650–462.175 BUS
 462.1875–462.450 BUS, IND
 462.4625–462.525 IND, OIL, TELM, UTIL
 462.550–462.925 GMR, BUS
 462.9375–463.1875 MED
 463.200–467.925 BUS

FM-TV Audio Broadcast, UHF Wide Band (470–512 MHz) (Channels 14 through 69 in 6 MHz steps)

475.750 Channel 14
 481.750 Channel 15
 487.750 Channel 16
 493.750 Channel 17
 499.750 Channel 18
 505.750 Channel 19
 511.750 Channel 20

Note: Some cities use the 470–512 MHz band for land/mobile service.

Conventional Systems Band – Locally Assigned

851.0125–855.9875 CSB

Conventional/Trunked Systems Band – Locally Assigned

856.0125–860.9875 CTSB

Trunked Systems Band – Locally Assigned

861.0125–865.9875 TSB

Public Safety Band – Locally Assigned

866.0125–868.9875 PSB

33-Centimeter Amateur Band (902–928 MHz)

902.000–928.000 HAM

Private Trunked Band

935.0125–939.9875PTR

General Trunked Band

940.0125–940.9875 GTR

FREQUENCY CONVERSION

The tuning location of a station can be expressed in frequency (kHz or MHz) or in wavelength (meters). The following information can help you make the necessary conversions.

1 MHz (million) = 1,000 kHz (thousand)

To convert MHz to kHz, multiply the number of megahertz by 1,000:

$$30.62 \text{ (MHz)} \times 1000 = 30,620 \text{ kHz}$$

To convert from kHz to MHz, divide the number of kilohertz by 1,000:

$$127,800 \text{ (kHz)} \div 1000 = 127.8 \text{ MHz}$$

To convert MHz to meters, divide 300 by the number of megahertz:

$$300 \div 50 \text{ MHz} = 6 \text{ meters}$$

TROUBLESHOOTING

If you have problems with your scanner, here are some suggestions that might help you eliminate the problem. If they do not, take your scanner to your local RadioShack store for assistance.

| Problem | Possible Cause | Remedy |
|----------------------------------|--|---|
| Scanner is on but will not scan. | SQUELCH is not adjusted correctly. | Turn SQUELCH clockwise. See "Turning on the Scanner and Setting Squelch" on Page 35. |
| Scanner is totally inoperative. | No power. | Check the batteries or make sure the AC adapter or DC adapter is connected properly. |
| | | Recharge the rechargeable batteries or replace the non-rechargeable batteries. |
| | The AC adapter or DC adapter is not connected. | Be sure the adapter's barrel plug is fully plugged into the PWR DC 9V jack. |
| | The batteries may be improperly installed. | Make sure the batteries are properly installed according to polarity markings on the battery holder. |
| Poor or no reception. | An antenna is not connected or connected incorrectly. | Make sure an antenna is connected to the scanner. |
| | Programmed frequencies are the same as birdie frequencies. | Avoid programming birdie frequencies or only select them manually. See "Birdie Frequencies" on Page 65. |
| Keypad does not work. | Keylock is turned on. | Turn off keylock. |

| Problem | Possible Cause | Remedy |
|---|--|--|
| In the scan mode, the scanner locks on frequencies that have an unclear transmission. | Stored frequencies are the same as "birdie" frequencies. | Avoid storing birdie frequencies or only select them manually. See "Birdie Frequencies" on Page 65. |
| Keys do not work or display changes. | Undetermined error. | Turn the scanner off then on again, or reset the scanner. See "Resetting/Initializing the Scanner" on Page 75. |

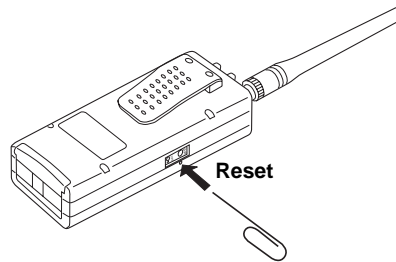
RESETTING/INITIALIZING THE SCANNER

If the scanner's display locks up or does not work properly after you connect a power source, you might need to reset or initialize it.

Important: If you have problems with the scanner, first try to reset it to retain all memory. If that does not work, you can initialize the scanner; however, initializing clears all information stored in the scanner's memory.

Resetting the Scanner

1. Turn off the scanner, then turn it on again.
2. Insert a pointed object, such as a straightened paper clip, into the reset opening on the side of the scanner. Then gently press and release the reset button inside the opening and the backlight lights.



Note: Pressing **RESET** does not clear the scanner's memory.

Initializing the Scanner

Important: This procedure clears all information you stored in the scanner's memory. Initialize the scanner only when you are sure the scanner is not working properly.

1. Turn off the scanner, then turn it on again. **Welcome To Multi-System Trunking** appears on the display.

-
2. Press **0** then **1** while the display shows **Welcome To Multi-System Trunking. Initializing Please Wait.** appears on the display about 25 seconds.

Note: Do not turn off the scanner until the initialization is complete and **Welcome To Multi-System Trunking** appears again.

CARE AND MAINTENANCE

Your RadioShack PRO-92 500-Channel Portable Trunking Scanner is an example of superior design and craftsmanship. The following suggestions will help you care for your scanner so you can enjoy it for years.



Keep the scanner dry. If it gets wet, wipe it dry immediately. Liquids can contain minerals that can corrode the electronic circuits.



Use only batteries of the recommended size and type. Always remove old and weak batteries. They can leak chemicals that destroy electronic circuits.



Handle the scanner gently and carefully. Dropping it can damage circuit boards and cases and can cause the scanner to work improperly.



Use and store the scanner only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts.



Keep the scanner away from dust and dirt, which can cause premature wear of parts.



Wipe the scanner with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the scanner.

Modifying or tampering with the scanner's internal components can cause a malfunction, invalidate your scanner's warranty and void your FCC authorization to operate it. If your scanner is not operating as it should, take it to your local RadioShack store for assistance.

SPECIFICATIONS

Frequency Coverage:

| | |
|----------------------|--------------------------------------|
| Ham | 29–30 MHz (in 5 kHz steps) |
| VHF Lo | 30–50 MHz (in 5 kHz steps) |
| Ham | 50–54 MHz (in 5 kHz steps) |
| Aircraft | 108–136.9875 MHz (in 12.5 kHz steps) |
| Government | 137–144 MHz (in 5 kHz steps) |
| Ham | 144–148 MHz (in 5 kHz steps) |
| VHF Hi | 148–174 MHz (in 5 kHz steps) |
| Ham/Government | 380–450 MHz (in 12.5 kHz steps) |
| UHF Lo | 450–470 MHz (in 12.5 kHz steps) |
| UHF T | 470–512 MHz (in 12.5 kHz steps) |
| UHF Hi | 806–823.9875 MHz (in 12.5 kHz steps) |
| | 849–868.9875 MHz (in 12.5 kHz steps) |
| | 894–960 MHz (in 12.5 kHz steps) |

Channels of Operation 500
(50 Channels x 10 Banks, 1000 Trunking ID Memories)

Number of Banks 10

Sensitivity (20dB S/N):

FM:

| | |
|------------------------|-------------|
| 29–54 MHz | 0.3 μ V |
| 108–136.9875 MHz | 0.3 μ V |
| 137–174 MHz | 0.5 μ V |
| 380–512 MHz | 0.5 μ V |
| 806–960 MHz | 0.7 μ V |

AM:

| | |
|------------------------|-------------|
| 29–54 MHz | 1 μ V |
| 108–136.9875 MHz | 1 μ V |
| 137–174 MHz | 1.5 μ V |
| 380–512 MHz | 2 μ V |
| 806–960 MHz | 2 μ V |

Selectivity:

| | |
|--------------|--------------|
| –6 dB | ± 10 kHz |
| –50 dB | ± 18 kHz |

Spurious Rejection (at 154 MHz FM) 40 dB

Scanning Rate Up to 25 Channels per Second

Limited One-Year Warranty

This product is warranted by RadioShack against manufacturing defects in material and workmanship under normal use for one (1) year from the date of purchase from RadioShack company-owned stores and authorized RadioShack franchisees and dealers. EXCEPT AS PROVIDED HEREIN, RadioShack MAKES NO EXPRESS WARRANTIES AND ANY IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. EXCEPT AS PROVIDED HEREIN, RadioShack SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO CUSTOMER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS OR DAMAGE CAUSED DIRECTLY OR INDIRECTLY BY USE OR PERFORMANCE OF THE PRODUCT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY, INCLUDING, BUT NOT LIMITED TO, ANY DAMAGES RESULTING FROM INCONVENIENCE, LOSS OF TIME, DATA, PROPERTY, REVENUE, OR PROFIT OR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF RadioShack HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow the limitations on how long an implied warranty lasts or the exclusion of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

In the event of a product defect during the warranty period, take the product and the RadioShack sales receipt as proof of purchase date to any RadioShack store. RadioShack will, at its option, unless otherwise provided by law: (a) correct the defect by product repair without charge for parts and labor; (b) replace the product with one of the same or similar design; or (c) refund the purchase price. All replaced parts and products, and products on which a refund is made, become the property of RadioShack. New or reconditioned parts and products may be used in the performance of warranty service. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period.

This warranty does not cover: (a) damage or failure caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, lightning or other incidence of excess voltage or current; (b) any repairs other than those provided by a RadioShack Authorized Service Facility; (c) consumables such as fuses or batteries; (d) cosmetic damage; (e) transportation, shipping or insurance costs; or (f) costs of product removal, installation, set-up service adjustment or reinstallation.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

RadioShack Customer Relations,
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We Service What We Sell

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Fort Worth, Texas 76102

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